

Extract and Derive a Variable, then Plot

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# Import the modules needed for the tutorial
import vcs, cdms, cdutil, time, os, sys

# Open data file:
filepath = os.path.join(sys.prefix, 'sample_data/ts_da.nc')
cdmsfile = cdms.open( filepath )

# Extract a 3 dimensional data set
data = cdmsfile('ts')

# From viewing the dataset's attributes, we see that
# it is "Surface Air Temperature" and its units are
# represented in kelvin (K).
data.info()

# Initial VCS:
v = vcs.init()

# Plot data using the default boxfill graphics method:
v.plot( data )

print "Press the Return key to see next plot."
sys.stdin.readline()

# Select one time step, and average over the longitude axis,
# resulting in a zonal mean
dl=cdutil.averager(data(time=7665, squeeze=1), axis='x')

# Set the variable's ID to 't_z'.
dl.id = 't_z'

# Clear the VCS Canvas and plot the 1D dataset.
v.clear()
v.plot( dl )

print ""
print "Press the Return key to see next plot."
sys.stdin.readline()

# Subtract 273.16 to produce temperature in degrees C
dc = data - 273.16
dc.id = 'ts'
dc.long_name = 'Surface (2m) Air Temperature [C]'

v.clear()
v.plot( dc )

print "Press the Return key to see next plot."
sys.stdin.readline()

# Extract a 4 dimensional dataset
filepath = os.path.join(sys.prefix, 'sample_data/ta_ncep_87-6-88-4.nc')
cdmsfile = cdms.open( filepath )
data = cdmsfile('ta')

# Average over time and longitude to get a variable
# with latitude and level axes

d2 = cdutil.averager(data, axis='tx')
d2.id = 't_zh'
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# Plot results
v.clear()
v.plot( d2 )

print "Press the Return key to see next plot."
sys.stdin.readline()

# Extract data from a specific level
dp = cdmsfile('ta', \
    longitude=(180, -180), \
    Â latitude = (90., -90.), \
Â    level =(200., 200.), \
    squeeze=1)

# Plot results
v.clear()
v.plot( dp )

print "Press the Return key to end the script."
sys.stdin.readline()
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